



Exploration Systems Mission Directorate

The CEO Plan:

***Communication, Engagement and
Outreach Planning for Prometheus
Nuclear Systems and Technology***



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PROMETHEUS: Background

- NASA Complies Fully with Environmental and Nuclear Safety Launch Approval Processes Applicable to the Use of Nuclear Power Systems in Outer Space
 - National Environmental Policy Act (NEPA)
 - Purpose: Ensure NASA considers the potential environmental impacts of a proposed mission (or program) and reasonable alternatives
 - Entails: Environmental Assessment or Environmental Impact Statement (EIS), as appropriate
 - Provides opportunity for public engagement
 - Presidential Directive/National Security Council Memorandum #25 (PD/NSC-25) (as amended)
 - Purpose: Ensure informed decision-making at the Presidential level before launching a mission with radioisotope power systems (including radioisotope heater units) or nuclear reactors.
 - Entails: NASA/DOE safety analyses, interagency safety evaluation, and nuclear safety launch approval by Director of OSTP or the President.



PROMETHEUS: BACKGROUND

- **Public attitudes toward NASA's use of space nuclear power have changed over last thirty years:**
 - Pre-Challenger (1986): few concerns about NASA's safety record
 - Post-Challenger: issues over shuttle safety heightened concerns about RPS
 - Post-Columbia: receiving additional scrutiny about launch safety
- **Galileo (1989), Ulysses (1990) and Cassini (1997) faced media, Congressional, and public opposition:**
 - Opposition increased with each mission
 - Lawsuits filed to stop launches and Earth swingbys
 - Letters to White House and Congress, local editorials, local political actions, international actions
- **In response, NASA devoted increased resources to address these concerns in a highly reactive mode**



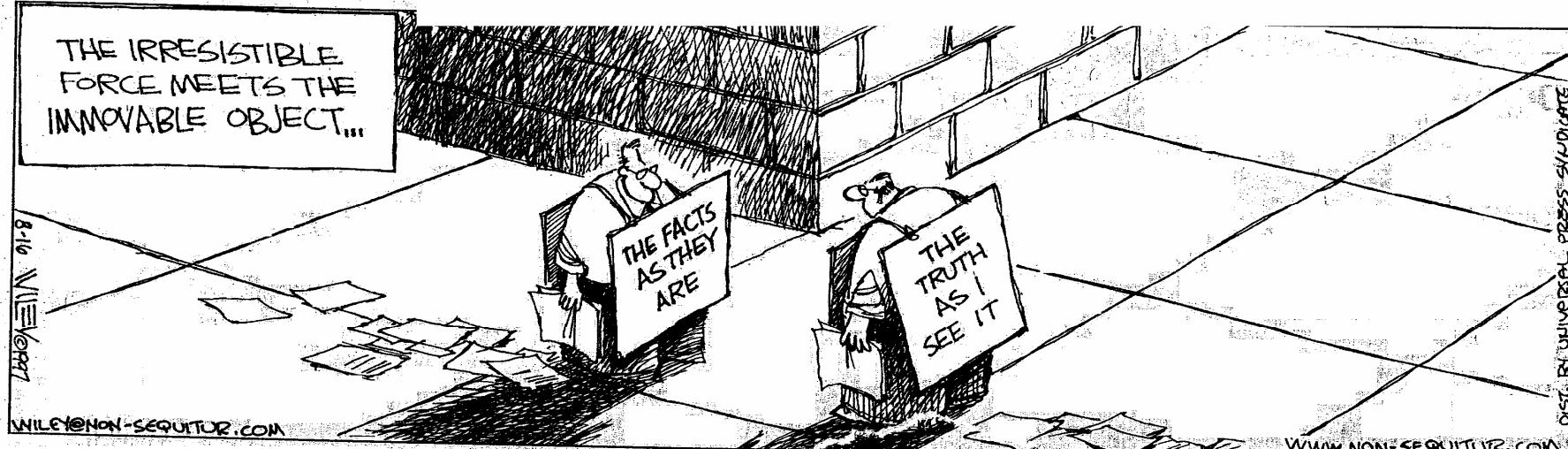
PROMETHEUS CEO: IDENTIFYING CONCERNS

- Positions/concerns expressed by stakeholders and public (summarized from a wide range of sources) :
 - “NASA is supporting plans for militarization and weaponization of space”
 - “There are other, higher priorities that should concern the Nation”
 - “Technology is untested and untrustworthy”
 - “Costs undetermined and incalculable”
 - “Reactors are more dangerous than RPS”
 - “Columbia accident is an example of NASA’s inability to manage nuclear power”
 - “White House is polluting the clean goals of space program”



PROMETHEUS: IDENTIFYING CONCERNS

NON SEQUITUR WILEY



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**Background on Risk Perception:
Where you stand depends on where you sit.**



What is Risk?

- Technical RISK =
Probability of a Hazard Occurring
 \times
Consequence of a Hazard if/when It
Occurs
- Perceived RISK =
Technical Risk \times
Nature of the Hazard \times
Context of the Perceiver



Socially: Perceived Risk is About Context

- Risks Perceived to...
- Be *voluntary*
- Be under an individual's *control*
- Have clear *benefits*
- Be distributed *fairly*
- Be *natural*
- Be *statistical*
- Be generated by a *trusted* source
- Be *familiar*
- Affect *adults*
- Are More Accepted Than...
- Risks perceived as being *imposed*
- Risks perceived to be *controlled by others*
- Risks perceived to have *little or no benefit*
- Risks perceived to be *unfairly distributed*
- Risks perceived to be *manmade*
- Risks perceived to be *catastrophic*
- Risks perceived to be generated by an *untrusted* source
- Risks perceived to be *exotic*
- Risks perceived to affect *children*



Technology and Risk: It's About Perception





Historically: “Risk” is Recent

- Prior to WWII, very few perceptual issues
 - Either greater trust, or greater perceived benefit
- Post-WWII, early 1960s, the Cold War
 - Increased public concern for decisionmaking
 - Rise of ‘the technocracy’
 - Sputnik, Silent Spring, Vietnam: national ‘questioning’
- 1970s ‘betrayals’
 - Thalidomide, DDT, Love Canal, Centralia Coal Fire, Vietnam, energy crisis, Three Mile Island
 - Science studies challenge ‘scientific exceptionalism’ and technological determinism
 - Rise of expert risk assessment and management
- 1980s ‘technological stigma’
 - Nuclear winter, Chernobyl, Bhopal, Global Warming



Risk Communication:

- Accepts that the dialogue sometimes may be more about 'feelings' than 'facts'
- Shares information and acknowledges concerns
- Appreciates diverse opinions and perspectives in an atmosphere of consensus building
- Communicators are proactively prepared and understand their role

Consistent messages, open and accountable processes, and a solid understanding of the importance of good risk communication are important.



What is Risk Communication?

Risk Communication is *not*...

Telling people what we want them to know, in order to get them to behave 'rationally', that is, the way we *think* they should behave.



PROMETHEUS: CEO Goal

**Build Trust in NASA's Stewardship of
Nuclear Technologies for Space
Exploration**



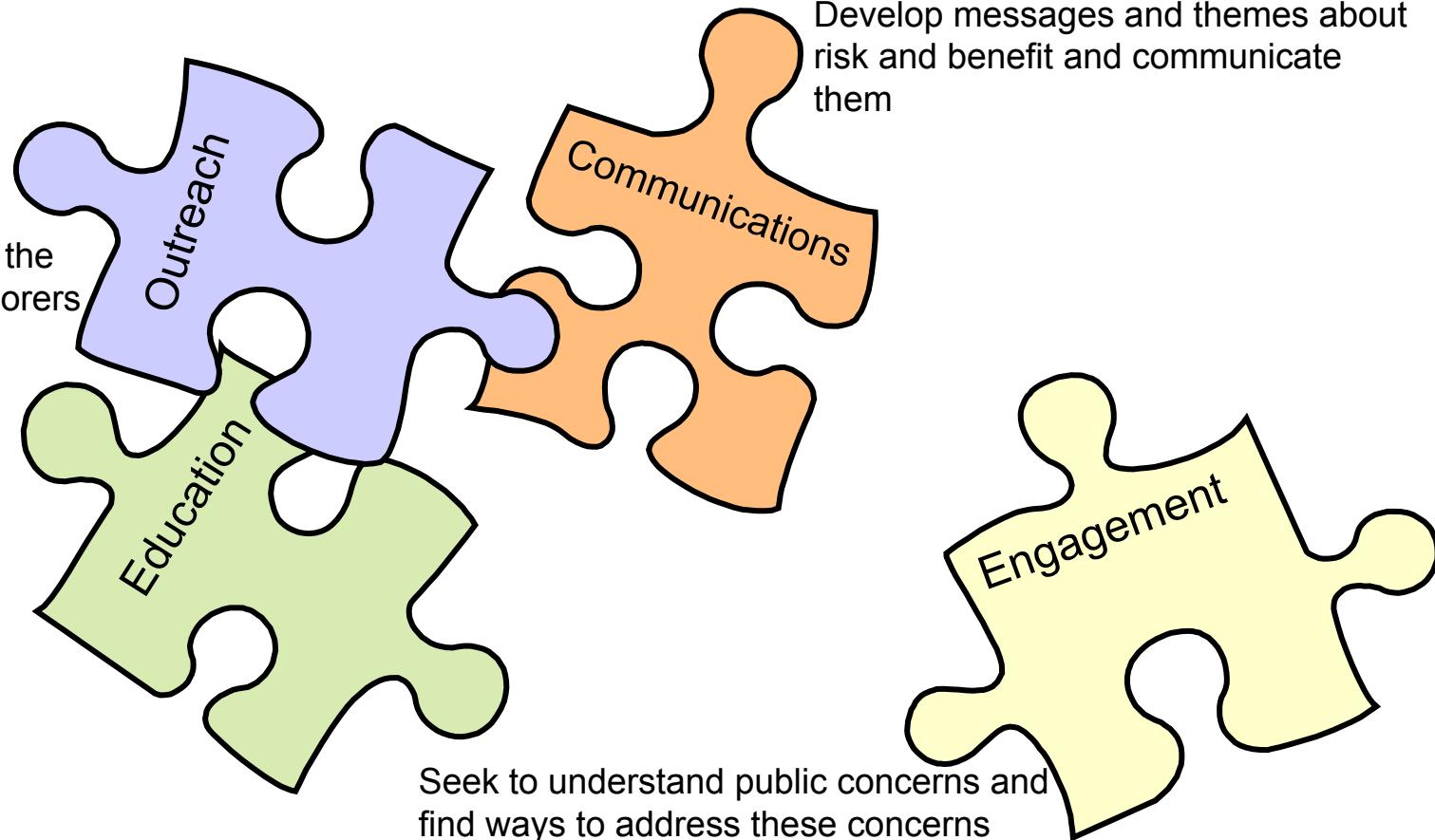
PROMETHEUS: CEO Objectives

- **Ensure** clear, consistent, open, accountable, quality, **communication** processes and products by providing training and skills development for NASA, DOE, and contractor personnel with the expectation that these skills will augment, and be applied, to all internal risk management processes
- **Enable** extended, inclusive **engagement** with stakeholders: the scientific community, federal and contractor workers, environmental and other public interest groups, Congress, Federal Agencies, the media, and the public through stakeholder meetings and other public fora, including internet based interactions
- **Develop and expand** education and **outreach** products and processes to enable access to information, promote technological literacy, and establish inclusive communications processes



Prometheus CEO: Putting the pieces together

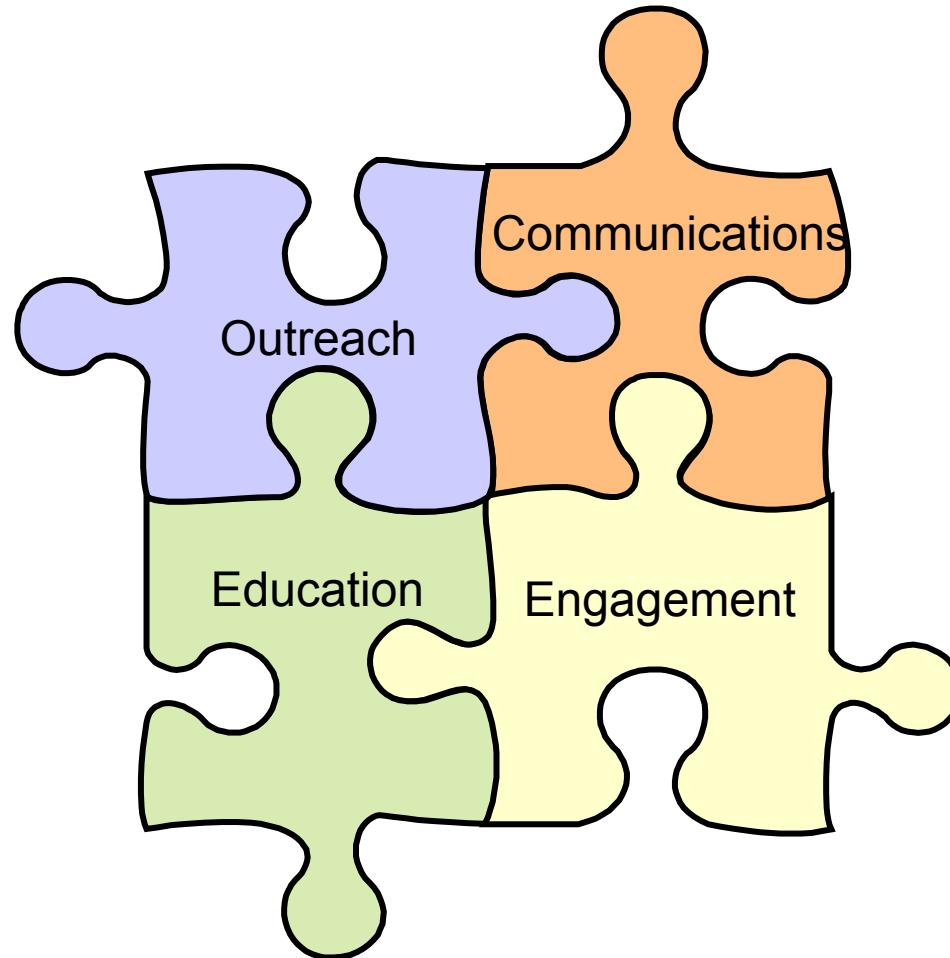
Inspire and encourage the next generation of explorers and their families



Normally, there is a loose connection between different communications, education and outreach functions, usually based on communicating mission goals; there is normally no engagement



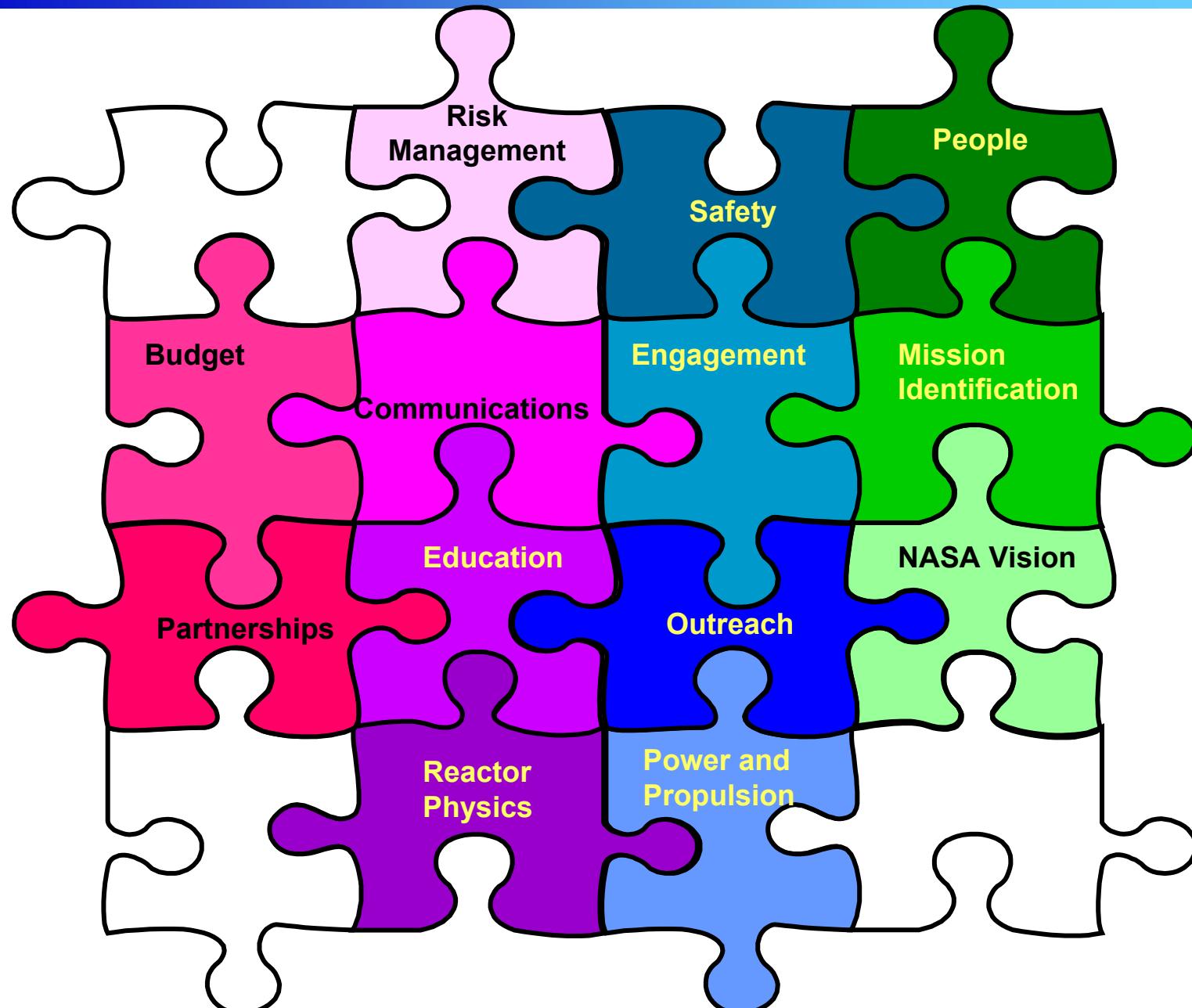
Prometheus CEO: Putting the pieces together



Prometheus links existing processes and programs, with the addition of engagement activities, to enable public awareness and understanding of Prometheus goals and the NASA Vision and Mission.



Prometheus CEO: Putting the pieces together





PROMETHEUS: RISK COMMUNICATION RATIONALE

- External Communication with a coordinated message and proactive public engagement can:
 - Reduce misinformation and possible resulting concern
 - Increase trust among the public, media, and local/state/national governments
 - Maintain NASA's awareness of potential issues and concerns
- Goes beyond mere information dissemination or public relations and is a necessary complement to risk management requiring:
 - A proactive approach with early process development
 - Training and skills development across organizational levels
 - Interactive and iterative learning and adaptive communications strategies



PROMETHEUS: IDENTIFYING OPPORTUNITIES

- Determine and coordinate the messages
 - What information is crucial to convey and are the messages different?
 - What are the obstacles to effective communication and how can they be minimized?
- Ensure that spokespersons are identified and prepared
 - What are the opportunities for effective communication and outreach and how can they be maximized?
 - What is the environment into which we are introducing information?
 - Who are the audiences and what are their attitudes?
- Engage the public and the media in a long-term coordinated dialogue, using a variety of formats
 - What questions can we anticipate from the public when we communicate risk messages?
 - What are the news medias' responsibilities and how can we help reporters meet them?
 - How can we initiate a dialogue with our audiences?



PROMETHEUS: *Benefits of Dialogue*

- The Process:
 - Invite a diverse group of individuals to participate in a dialogue to help scope issues and problem-solve as appropriate
 - Ask them to help scope and anticipate potential issues
 - Ask them to provide input into the development of safe, reliable, and cost-effective R&D nuclear technologies
- The Result
 - Build perceived legitimacy for decision-making
 - Provide new and more detailed information
 - Deepen stakeholders' understanding of complexity of issues and trade-offs involved in program implementation
 - Help build informed constituencies



PROMETHEUS: PARTING THOUGHT

We call it **CEO** for a reason

Technical Rigor is a necessary but insufficient condition for NASA's success

Building Trust in our stewardship of nuclear technologies is essential



BACKUP



PROMETHEUS - COMMUNICATION: IDENTIFYING OPPORTUNITIES

- Over 200 articles about Prometheus or space nuclear power last year
 - Media is aware of technical and social challenges
- Develop public awareness of Project Prometheus and promote the Vision for Space Exploration programs through proactive activities
 - NASA TV
 - NASA web portal
 - Press releases
 - Responses To Query's
 - Communications training for designated spokespersons
 - Media tours, roundtables, editorial boards
 - News conferences/briefings
 - External handout materials in development
- Coordinate with Exploration Systems and Science Mission Directorates to develop opportunities, leverage efforts



PROMETHEUS – ENGAGEMENT: IDENTIFYING ISSUES

- The Keystone Center (www.keystone.org) conducted a series of interviews to identify potential stakeholders and their concerns
- Summary of attitudes
 - Wide range of (un)familiarity with Project Prometheus and with NASA
 - Nuclear power considered by all to be a ‘hard sell’; alternative technologies of general interest
 - Potential international implications for nuclear non-proliferation positions held by the United States
 - Some are comforted by NASA’s candor and reliability after the Columbia accident, and some are not
 - Environmental concerns and health questions persist
 - There is qualified confidence in NASA’s ability to do a safe job; strong desire for independent review in areas of safety, health, environment, and risk analysis
 - There are positive and negative views regarding the collaboration between NASA and the DOE-NR program
 - Competing national spending priorities puts space exploration in a tenuous place
 - Strong desire for credible independent review



PROMETHEUS - ENGAGEMENT: IDENTIFYING POSSIBILITIES

- The Keystone Center (TKC) made 6 recommendations:
 - Strengthen written materials
 - Increase interaction with professional societies
 - Initiate early interaction with state and local regulators
 - Create a stakeholder process; i.e. a dialogue group
 - Build in independent review
 - Coordinate closely with Congress
- TKC briefed the NASA Administrator, May 20, 2004
- Mr. O'Keefe accepted all the recommendations
 - Prometheus has taken action on 5 out of 6
- Prometheus directed to move forward on the Dialogue on Nuclear Energy for Space Exploration